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BRADFORD

Original Bradford Soap Works, Inc.

July 25, 1989

Received 4/27/89

Ms. Lynne A. Fratus
U.S. Environmental Protection Agency (LRR-695)
P.O. Box 738
Centerville, VA. 22020

SUBJECT: Information relating to Landfill Site in North Smithfield, R.I.

Dear Ms. Fratus:

This reply may be slightly beyond the requested deadline, due to the fact that your request was dated July 6, 1989, and our plant was closed for annual shutdown and thus effectively received on July 18, 1989.

We have attempted to answer all questions as completely as possible in order to give a true picture of our operations.

Please feel free to contact us if further information is necessary.

Sincerely,

ORIGINAL BRADFORD SOAP WORKS, INC.

William S. Barnes

William S. Barnes,
Chief Chemist

WSB:bw

Enc.

CS 1007, West Warwick, RI 02893, (401) 821-2141
Telefax (401) 821-5960 Telex 952-240

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Answers to Items on "Attachment A-7"

1. a. Original Bradford Soap Works is a basic soap manufacturer. The majority of our production is used as toilet soap (the sodium soaps of tallow and coconut oil). Raw materials are mainly tallow, coconut oil, a very few other soap-making fats, sodium hydroxide, and sodium chloride. We use the full-boiled kettle process which combines these materials to form soap under boiling conditions with live steam. The soap process yields soap, plus "soap lyes" which settle out consisting of water, salt, sodium hydroxide and glycerine and minor amounts of soap. These lyes are removed from each batch in order to recover the glycerine. The end product of the soap process is dry soap which we process into bars of soap for personal use.

   b. The nature of our business has not changed since 1980, except volume is higher.

2. The "plaster/soap sludge" (misnamed) is generated in the paragraph above. The dilute lye is treated with hydrochloric acid to lower the pH to 5 which "splits" the soap into fatty acids, which are then reacted with Alum (Aluminum Sulfate) which forms an insoluble aluminum soap. The excess alum, being soluble, is kept to a minimum. After neutralizing, this insoluble aluminum soap is then filtered thru a filter press, leaving a "cake" in the press and allowing the soap-free liquid (water white) to be saved for recovery. The resulting filter cake, when the press is full (about every two weeks) is blown with compressed air producing a cake barely moist to the touch.

   The other filter cake results from our fat bleaching operation. After a fat is loaded into a tank and heated under vacuum, about 2% of the weight of a bleaching earth (activated clay, such as "Filtrol"), is added along with about 1/4% a filtering aid (diatomaceous earth, such as "Celite"). After bleaching, the fat is filtered to remove the earths. This cake is blown with both live steam and compressed air to remove as much bleached fat as possible. The resulting cake is then removed automatically by a vibrator which removes all the cake from the screens. The resulting cake is hot and dry and has almost no greasy feel, although about 15 - 25% of the weight of the cake is fat. The total fat weight (loss) is so small it is not routinely tested. Both of the above filter cakes are discarded in a dumpster.

3. Answered in Paragraph 2.

4. No additives other than mentioned in Paragraph 2.

5. Answered in Paragraph 2.

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6. Both filter cakes have always been disposed by placing in a dumpster, and then transported to Johnston Landfill. (Previously reported was Rhode Island D.E.M.'s letter stating materials were not hazardous). Copy enclosed.

a., b., c. No cleaning is necessary to any of the equipment mentioned above. They are essentially self-cleaning and ready for further use. Thus, no cleaning compounds are used, and nothing is disposed except the filter cakes described.

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PROVIDENCE, RI 029
PM
27 JUL
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